

AMENDMENT TO THE CLAIMS:

This following list of claims will replace all prior versions and listing of claims in this application.

38. (Previously Presented) An auxiliary power unit configured to be coupled to a torque bearing element of a primary power unit, comprising:

a fly wheel comprising a drive shaft and a plurality of blades;

an injection nozzle for injecting a condensable fluid towards the plurality of blades;

a clutch system configured to selectively couple the drive shaft to the torque bearing element;

and

a control system configured to control the clutch system to selectively couple the drive shaft to the torque bearing element,

wherein the control system is configured to adjust a characteristic parameter of the condensable fluid to adjust a rotational speed of the drive shaft,

wherein the control system comprises a first sensor for detecting a speed of the torque bearing element and a second sensor for detecting the speed of the drive shaft,

wherein the control system is configured to adjust the characteristic parameter of the condensable fluid based on the detected speeds of the torque bearing element and the drive shaft.

39. (Previously Presented) The power unit of claim 38, wherein the condensable fluid comprises superheated vapor.

40. (Previously Presented) The power unit of claim 38, wherein the torque bearing element is a crankshaft of an engine.
41. (Previously Presented) The power unit of claim 38, wherein the primary power unit is an automobile engine.
42. (Previously Presented) The power unit of claim 38, further comprising a condensation chamber for condensing the condensable fluid, the condensation chamber comprising an inlet and an outlet, wherein at least a portion of the plurality of blades is disposed ~~adjacent~~ in the inlet of the condensation chamber.
43. (Previously Presented) The power unit of claim 42, wherein the condensation chamber and the fly wheel are housed adjacent to one another within an expander housing.
44. (Previously Presented) The power unit of claim 42, wherein the outlet of the condensation chamber is hydraulically connected to a condenser.
45. (Previously Presented) The power unit of claim 38, further comprising a gear system for mechanically coupling the drive shaft of the fly wheel to the clutch system.
46. (Previously Presented) The power unit of claim 38, further comprising a condensation chamber for condensing the condensable fluid, wherein the condensation chamber is positioned inside a housing that houses the expander wheel.

47-48. (Canceled).

49. (Previously Presented) The power unit of claim 38, wherein the characteristic parameter comprises at least one of: pressure, temperature, and mass flow rate of the condensable fluid.

50. (Previously Presented) The power unit of claim 38, wherein the power unit is detachably mountable to the primary power unit.

51. (Currently Amended) An auxiliary power unit comprising:

a fly wheel housed in a housing and comprising a drive shaft and a plurality of blades
substantially forming one body;

a condensation chamber positioned inside the housing, the condensation chamber
comprising an inlet and an outlet, at least a portion of the plurality of blades is
disposed in the inlet of the condensation chamber;

an injection nozzle for injecting a condensable fluid towards the plurality of blades and the
inlet of the condensation chamber so as to rotate the fly wheel,

wherein the drive shaft is mechanically coupled to an electrical converter configured to
convert rotational energy of the drive shaft to electrical energy, and

wherein the condensation chamber condenses the condensable fluid after the condensable
fluid passes through the plurality of blades of the fly wheel, so as to further extract
energy of the condensable fluid, and

a control system configured to control the injection nozzle.

wherein the control system is configured to adjust a characteristic parameter of the condensable fluid to adjust a rotational speed of the fly wheel,

wherein the control system comprises a first sensor for detecting a speed of the fly wheel and a second sensor for detecting the speed of the drive shaft,

wherein the control system is configured to adjust the characteristic parameter of the condensable fluid based on the detected speeds of the fly wheel and the drive shaft to adjust a speed of the fly wheel.

52. (Previously Presented) The power unit of claim 51, wherein the electrical converter comprises an electric generator.
53. (Previously Presented) The power unit of claim 51, wherein the condensable fluid comprises superheated vapor.
54. (Previously Presented) A method of providing auxiliary power to a primary power unit, comprising:
- injecting a condensable fluid towards a plurality of blades of a fly wheel to rotate a drive shaft of the fly wheel,
 - detecting a speed of the drive shaft of the fly wheel,
 - detecting a speed of a torque bearing element of the primary power unit,
 - selectively coupling the drive shaft to a torque bearing element of the primary power unit,
 - so as to provide the auxiliary power to the primary power unit, and

controlling the selective coupling of the drive shaft and the torque bearing element based
on the detected speeds of the torque bearing element and the drive shaft,
wherein controlling the selecting coupling comprises adjusting a characteristic parameter
of the condensable fluid to adjust the speed of the drive shaft.

55. (Previously Presented) The method of claim 54, further comprising condensing the
condensable fluid immediately after the condensable fluid passes through the plurality of
blades.

56. (Previously Presented) The method of claim 54, wherein selectively coupling is performed
by a clutch system.

57. (Canceled).

58. (Previously Presented) The method of claim 54, wherein:

fly wheel is housed in a housing;

a condensation chamber for condensing the condensable fluid is positioned inside the
housing; and

the method further comprises condensing the condensable fluid in the condensation
chamber immediately after the condensable fluid passes through the plurality of
blades of the fly wheel.

59-61. (Canceled).